Alexander Hay
ME333 - Mechatronics
HW 5 - Chapter 2, 3-16

3)

AN4	analog-to-digital input #4
C1IN-	comparator #1 negative input
CN6	change notification #6
RB4	digital i/o port

4) TRISC

5) 00C3

6)

SYSCLK	Clocks CPU at freq range 0-80 MHz.
PBCLK	Peripheral Bus Clock, used by peripherals at freq range SYSCLOCK/8,4,2,1.
PORTA-G	Allows port to be used as digital i/o ports. PORTB can be used for analog input.
Timer1-5	Counts the pulses of a regular signal to be used as a timer. PIC32 has 5 timers.
10-bit ADC	Continuously reads data and assigns value between 0-1023, interpreting 1024 different voltage levels
PWM OC1-5	Pulse Width Modulation, signals that can control motors or be low-pass filtered to create a specified analog voltage output.
Data RAM	Volatile memory that is not preserved when powered off, but faster than flash memory
PFM	Program Flash Memory, memory that is preserved when powered off. Used to program the PIC32
PCM	Prefetch Cache Module, loads next few instructions for the CPU to execute

7) PORTA-PORTG

8) ~0.0031v (~3.1 mV)

9) 256 bytes

10) The width is 128 bits wide because the CPU bandwidth is 32 bits but at 4x the frequency

11) Digital I/O pins can be configured as "open drains", where the pin is connected by an external pull-up resistor to a voltage up to 5.5v

12)

Region	HEX, DEC
RAM	0x1D000000, 486539264
Flash	0x2800000, 41943040

PIC32 has a 4GB memory map

13)

a) REGISTER 28-2: DEVCFG1: DEVICE CONFIGURATION
bit 13-12: FPBDIV<1:0>: Peripheral Bus Clock Divisor Default Value bits
01 = PBCLK is SYSCLK divided by 2

b) REGISTER 28-6: WDTCON: WATCHDOG TIMER CONTROL REGISTER
bit 15 ON: Watchdog Timer Enable bit (1,2)
1 = Enables the WDT if it is not enabled by the device configuration

bit 6-2 SWDTPS<4:0>: Watchdog Timer Postscale Select bits
10100 = 1:1048576

c) Register 6-1: OSCCON: Oscillator Control Register
bit 14-12 COSC<2:0>: Current Oscillator Selection bits
011 = Primary Oscillator (P OSC) with PLL module (XTPLL, HSPLL or ECPLL)

14) Pg 30 says "you should not plan to draw more than 200-300 mA or so from the NU32"

V=IR, R is unknown
V = 5 V
I = 300 mA
R = 16.6 ohms

15) NU32 provides 3.3V and has a 5V. The plug should provide 6V @ 1A

16)

LED1	pin 58/RF0
LED2	pin 59/RF1
BUT1	pin 55/RD7
BUT2	pin 7/MCLR